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A BASIC REFERENCE SHELF ON THE NEW MEDIA AND TEACHER TRAINING. A SERIES ONE PAPER FROM ERIC AT STANFORD.

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ANNOTATED REFERENCES ENCOMPASS RESEARCH RESULTS AND EVALUATIONS OF CONCEPTS AND PRACTICE IN TEACHER EDUCATION, ANALYSES OF THE CHALLENGE AND POTENTIAL OF THE NEW MEDIA, AND GUIDES TO RIGOROUS RESEARCH DESIGN AND METHODOLOGY. PERIODICALS AND ASSOCIATIONS CONCERNED WITH TEACHER EDUCATION AND INSTRUCTIONAL TECHNOLOGY ARE ALSO LISTED. (LM)

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A BASIC REFERENCE SHELF ON

THE NEW MEDIA AND TEACHER TRAINING

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THE NEW MEDIA AND TEACHER TRAINING

Modern technology has provided education with a remarkable array of electronic and mechanical aids--filmstrips, motion pictures, slides, radio and television, audio and videotape recordings, and computers, to mention only a few.

These innovations, popularly categorized under the labels of "educational technology" or "new media," have been received with reactions which at times have been enthusiastic, but more often have come close to apathy, fear, or even hostility. Indeed, it is the exceptional educator who to date has adequately searched out and developed techniques in teaching, learning and research which utilize these new media.

Such conditions strongly underscore the need for both sound sources and wide dissemination of relevant information. And it is within this framework that this paper has been compiled. Its emphasis is on the harnessing of science and technology to the preparation and training of teachers; its purpose is to bibliographically highlight a new dimension of the potential of technology in education.

As herein viewed, the phrase "technology in education" does not necessarily refer to instrumentation, but more to the effective coordination of educational techniques and procedures which can maximally expedite learning.

REFERENCES RELATED TO TRENDS IN TEACHER EDUCATION:

1. Allen, Dwight W., Richard J. Clark, and James M. Cooper. *Micro-Teaching: A Description.* Stanford, California: Stanford Teacher Education Program, Stanford University (1967). 75+ pp.

This manual offers a collection of papers and research instruments developed in the evolution of the micro-teaching component of the Teacher Education Program at Stanford University. It is recommended as first

reading for anyone interested in the use of the micro-teaching technique as a combined training and diagnostic tool for either pre-service teaching experience or in-service programs of teacher improvement.

2. Bellack, Arno A. *Theory and Research in Teaching*. New York: Bureau of Publications, Teachers College, Columbia University (1963). 122 pp.

To provide opportunity for discussion of some of the theoretical problems arising out of studies on the roles, functions and activities of teachers, the Department of Curriculum and Teaching of Teachers College sponsored two conferences during the Spring and Fall of 1962. Researchers engaged in studies of classroom behavior were invited to prepare papers reporting on the conceptual framework within which their studies were planned and carried out. These papers served as the basis for discussion during the conferences, and in this report they are made available to a wider audience. Authors of these papers include B. Othanel Smith, Milton Meux, and Ned Flanders.

3. Bosley, Howard E., and Harold E. Wigren. *Television and Related Media in Teacher Education, Some Exemplary Practices*. Baltimore, Maryland: Multi-State Teacher Education Project (August, 1967). 53 pp.

This monograph focuses attention on a selected number of exemplary uses of television and videotape recording in the professional education of teachers. It contains general statements on the potential of new media in teacher training and individual descriptions of institutions felt to be making worthwhile progress in the field.

4. Carley, Verna A. *Report of Progress in Teacher Education, Technical Cooperation in Forty Developing Countries*. Washington, D.C.: Office of Educational Services, International Cooperation Administration (1960). 101 pp.

This study on teacher education is one of a series being prepared by the Technical Resources Division of the Office of Educational Services. The study reviews present programs and projects in teacher education as

carried out by the Education Division of ICA Missions in cooperation with some forty foreign countries. Promising practices are highlighted and guidelines are developed for present and future teacher education projects. Countries included in this study represent Latin America, the Near and Far East, South Asia and Africa.

5. Conant, James Bryant. *The Education of American Teachers.* New York: McGraw-Hill Book Company, Inc. (1963). 275 pp.

This volume presents the findings of a two-year study on the preparation of American teachers for the elementary and secondary schools.

With the assistance of a traveling team of educators, Dr. Conant visited some 77 institutions of higher education seeking to place the complex problems of teacher education and certification in perspective. Notwithstanding a few self-imposed data-collection limitations, the study provides an excellent descriptive listing and analysis of the great variety of existing teacher education programs and concludes with specific recommendations for the improvement of teacher education in general.

6. Cyphert, F. R., and E. Spaights. *An Analysis and Projection of Research in Teacher Education.* Columbus, Ohio: The Ohio State University Foundation (1964). 317 pp.

The project and culminating conference reported in this document--supported by a U.S. Office of Education grant--brought together a number of distinguished educators and research scholars for an exploratory look at teacher education. This publication comments on the project findings, appraises the progress of research in teacher education and presents an appropriate schema for identifying and guiding future research in this area. In addition to the authors, other participants whose viewpoints are represented include Othanel Smith, Milton Meux, Raymond Collier, Ned Flanders, Elizabeth S. Maccia and C. Walter Stone. The section by Stone offers an excellent overview on the implications of instructional media research to teacher training.

7. Krumboltz, John D. (Editor) *Learning and the Educational Process*. Chicago, Illinois: Rand McNally and Company (1965).

This collection of ten papers is an outgrowth of the Conference on Learning and the Educational Process held at Stanford University in 1964. The participants were an outstanding group of young research workers in education, psychology and sociology. At this conference, they reviewed their past work and laid plans for new studies on learning and motivation in education. The book is a fine sampling of varied research approaches and significant research findings. Of particular relevance to teacher training and technology is a chapter by Lawrence Stolurow on the construction of appropriate teaching models. He illustrates these models by describing SOCRATES, a computer-based systematic approach which models the teaching process and tests the appropriateness of the models.

8. Schueler, Herbert and Gerald S. Lesser. *Teacher Education and the New Media*. Washington, D.C.: The American Association of Colleges for Teacher Education, National Education Association (1967). 122 pp.

This booklet, which resulted from a study developed between the U.S. Office of Education and Hunter College, City University of New York, is probably the single most comprehensive source of research evidence on the role of new media in teacher education. Not only does it individually and collectively review the functional characteristics of both teacher education programs and new media, but it also provides much needed methodological guidance for experimental and applied research in this field. The concluding section of this publication contains a bibliographical listing of 467 documents relevant to teacher education and the new media.

9. Pinney, Robert H., and Robert J. Miltz. *Television Recordings and Teacher Education: New Directions*. Stanford, California: Secondary Teacher Education Program, Stanford University (1967). 25 pp.

This pamphlet is a capsule summary of the use of the portable videotape recording system in the research and development program at Stanford University. The components of the micro-teaching technique and the internship program are discussed; in addition, cost and equipment specifications of the videotape recording system currently in use at Stanford are included. The pamphlet is designed as an informational supplement to the manual, *Micro-Teaching: A Description*, which has already been cited.

10. Wigren, Harold E., Henry T. Ingle, and Michael Molenda. *A Survey of Instructional Closed-circuit Television.* Washington, D.C.: Department of Audiovisual Instruction, National Education Association (1967). 196 pp.

This national state-of-the-art survey of instructional CCTV systems includes a directory describing the present user patterns of this medium in some 700 American educational institutions (ranging from elementary schools to universities). The directory section includes detailed "software" and "hardware" information for each CCTV user institution. Special mention is made of institutions using their CCTV systems for in-service and/or pre-service teacher education. This particular listing can be used as a sampling frame for future research in teacher education and new media, and also can help facilitate communication among institutions operating or planning instructional CCTV systems for use in teacher education programs.

CHARACTERISTICS OF NEW MEDIA IN EDUCATION:

11. Harris, C. W. (Editor) *Encyclopedia of Educational Research.* Third Edition. New York: MacMillan (1960). 1564 pp.

This publication is a continuing project of the American Education Research Association which was initiated in 1941 with the publication of the first edition under the editorship of Walter S. Monroe. The Encyclopedia provides a critical evaluation, synthesis and interpretation of studies in education and related fields. In this particular edition, special attention

is invited to W. H. Allen's review of Audiovisual Communication research, pp. 115-137, and the section on teacher education, pp. 1452-1543, by Lee Cronbach, Charles Clarke, Laurence D. Haskew, *et. al.* Topics included in this latter section include items on teacher-effectiveness criteria, student teaching, internships and training devices.

12. Meierhenry, Wesley C. (Editor) *Learning Theory and AV Utilization.* Special issue, *AV Communication Review*, Vol. 9, No. 5, Sept.-Oct., 1961. Washington, D. C.: Department of Audiovisual Instruction, National Education Association. 88 pp.

The editor of this supplementary special issue of AVCR has collected a series of authoritative papers which come to grips with the problems of effectively utilizing audiovisual materials. The basis of discussion is the application and elaboration of the general theories of human learning. Study of the articles should furnish the educational researcher and practitioner with a sound basis for the application of technology to training programs and classroom learning.

13. Rossi, Peter H., and Bruce J. Biddle (Editors) *The New Media and Education.* New York: Doubleday and Company, Inc. (1967). 460 pp. (Available in paperback as Anchor A604.)

Shunning the usual overly-exaggerated optimism about the latest technological innovations, this book presents an excellent collection of interdisciplinary papers by leading sociologists and psychologists on the challenges and impact the new media offer education and society in general.

METHODOLOGICAL ISSUES IN TEACHER TRAINING AND NEW MEDIA RESEARCH:

14. Campbell, D. T., and J. C. Stanley. "Experimental and Quasi-Experimental Designs for Research on Teaching," *Handbook of Research on Teaching.* (Edited by N. L. Gage.) Chicago: Rand McNally (1963). 171-246.

This chapter, which is now available in a handy paperback from Rand McNally and Co., is undoubtedly the clearest exposition available on

the development of sound research designs. It can be most helpful to prospective researchers in assisting them to determine the inherent advantages and disadvantages of varied research strategies--an area presently plaguing many researchers in the field of teacher training and educational media.

15. Gage, N. L. (Editor) *Handbook of Research on Teaching*. Chicago: Rand McNally (1963). 1218 pp.

This handbook summarizes, critically analyses, and integrates a large number of studies completed on teaching and the learning process. Its uniqueness undoubtedly lies in the very complete discussions of the conceptual methodological techniques used in research in teaching.

16. Webb, E. J., D. T. Campbell, R. D. Schwartz, and L. Sechrest. *Unobtrusive Measures: Nonreactive Research in the Social Sciences*. Chicago: Rand McNally (1966). 225 pp.

Chapter six of this research monograph--"Contrived Observation: Hidden Hardware and Control"--is recommended to educational researchers considering the use of technological devices for research purposes. Although not intended specifically for researchers in the teacher training field, its relevance is readily apparent. Chapter six offers an excellent over-all appraisal of the "pros" and "cons" in the use of technological devices as data-collection instruments, and deals with the Hawthorne effect, videotape recordings, etc. The informational benefits to be derived from reading this monograph are only exceeded by the entertainment resulting from the authors' manner of presentation.

17. *Training Research and Education*. (Edited by Robert Glaser) New York: John Wiley and Sons, Science Editions (1965). 596 pp.

This collection of reports from the leading men in the field of experimental psychology presents research findings and experiences as they relate to training. It is a representative account of the research and development in the problems of training and the underlying phenomena of

learning. For this reason, it offers valuable guidance on the gains, losses, promising paths and avoidable detours in teacher education.

Worth special attention are the chapters by Glaser, "Psychology and Instructional Technology;" Frederiksen, "Proficiency Tests for Training Evaluation;" Gilbert, "A Structure for a Coordinated Research and Development Laboratory," and Lumsdaine, "Experimental Research on Instructional Devices and Materials."

18. *Theories of Learning and Instruction:* 63rd Yearbook of the National Society for the Study of Education. Part I. (Edited by E. R. Hilgard.) Chicago: The University of Chicago Press (NSSE), 1964. 430 pp.

In this yearbook the concern is with the professional problems of developing psychological methodologies that will be used collaboratively to deal with basic problems of education. This preoccupation is shown in the several chapters dealing with educational technology and the concern with a psychology of teaching. The underlying premise of the present yearbook is a furtherance of the belief in a scientific psychology of learning.

PERIODICALS ON TEACHER EDUCATION AND/OR INSTRUCTIONAL TECHNOLOGY:

The American Educational Research Journal, published four times a year by the American Education Research Association, Washington, D. C., presents original reports on experimental and theoretical studies in education. In past issues, some attention has been given to current developments in teacher training and educational technology.

AV Communication Review, published quarterly by the Department of Audiovisual Instruction, National Education Association, Washington, D.C., is perhaps the best single source for keeping abreast of current developments and research in the field of instructional technology. Many of its issues report on the utilization of these technologies in teacher education.

Audiovisual Instruction--a monthly magazine from the Department of Audiovisual Instruction, National Education Association, Washington, D. C., takes a broad look at the dynamic field of instructional audiovisual media. It is recommended reading for educational researchers and practitioners concerned with utilization of the newer media.

The Journal of Educational Research, published ten times a year at Madison, Wisconsin, reports on research articles and critiques designed to advance the study of education as an applied behavioral science.

Educational Screen and Audiovisual Guide, published monthly by Educational Screen, Inc., Chicago, reports on exemplary practices in the use of media and the development of new technologies and educational services.

Educational Technology is published bimonthly by Educational Tech Publications, New Jersey. As a magazine, its primary emphasis is on the field of educational media as they are today and as perhaps they will be in the future. Educational technology is somewhere from one to several steps: technology-as-machines and technology-as-systems-science.

The Journal of Experimental Education is a journal Educational Research Services[9] publication devoted to experimental or technical education studies and treatments about the measurement or methodology of behavioral research.

Technology of Education (formerly *Journal of Educational Technology*), published quarterly by the American Technological Association, Albany, New York, is devoted to the theory and practice of education as a means for technological social change. From this reason, it is a relatively conservative study in technical education.

The Journal of Secondary Education is published quarterly by the National Committee on Secondary Education and Professional Standards.

National Education Association, Washington, D.C. It is the only national professional journal concerned exclusively with the total spectrum of teacher education, including pre-service, in-service, and graduate education.

ORGANIZATIONS AND ASSOCIATIONS CONCERNED WITH TEACHER EDUCATION AND INSTRUCTIONAL TECHNOLOGY:

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